

IMPORTANT SAFETY INFORMATION

INDICATION: MYALEPT* (metreleptin) for injection is a leptin analog indicated as an adjunct to diet as replacement therapy to treat the complications of leptin deficiency in patients with congenital or acquired generalized lipodystrophy.

LIMITATIONS OF USE: The safety and effectiveness of MYALEPT for the treatment of complications of partial lipodystrophy or for the treatment of liver disease, including non-alcoholic steatohepatitis (NASH), have not been established.

MYALEPT is not indicated for use in patients with HIV-related lipodystrophy. MYALEPT is not indicated for use in patients with metabolic disease, including diabetes mellitus and hypertriglyceridemia, without concurrent evidence of generalized lipodystrophy.

WARNING: RISK OF ANTI-METRELEPTIN ANTIBODIES WITH NEUTRALIZING ACTIVITY AND RISK OF LYMPHOMA

Anti-metreleptin antibodies with neutralizing activity have been identified in patients treated with MYALEPT. The consequences of these neutralizing antibodies are not well characterized but could include inhibition of endogenous leptin action and/or loss of MYALEPT efficacy. Severe infection and/or worsening metabolic control have been reported.

Test for anti-metreleptin antibodies with neutralizing activity in patients who develop severe infections or show signs suspicious for loss of MYALEPT efficacy during treatment. Contact Amryt Pharmaceuticals DAC at 1-866-216-1526 for neutralizing antibody testing of clinical samples.

T-cell lymphoma has been reported in patients with acquired generalized lipodystrophy, both treated and not treated with MYALEPT. Carefully consider the benefits and risks of treatment with MYALEPT in patients with significant hematologic abnormalities and/or acquired generalized lipodystrophy.

Because of these risks associated with the development of anti-metreleptin antibodies that neutralize endogenous leptin and/or MYALEPT and the risk for lymphoma, MYALEPT is available only through a restricted program under a Risk Evaluation and Mitigation Strategy (REMS) called the MYALEPT REMS PROGRAM.

Please see additional Important Safety Information throughout and accompanying full Prescribing Information.



MYALEPT®: The first and only FDA-approved treatment for generalized lipodystrophy (GL).

What's inside



Getting a patient started on Myalept

- REMS training
- Rx form
- Patient enrollment form



Myalept Prior Authorization and Access Guide

- Medical necessity letter template
- Appeal letter template



Myalept Dosing and administration guide



Copay support information

Please refer to the full Terms and Conditions in the back pocket for additional eligibility requirements.



US Prescribing Information



Contact Information Card





SCAN THE QR CODE FOR THE DIGITAL RX FORM







HOURS OF OPERATION Monday to Friday 8:00am - 8:00pm (Eastern Time)

For more information, visit chiesitotalcare.com

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WARNINGS AND PRECAUTIONS: A dose adjustment, including possible large reductions, of insulin or insulin secretagogue may be necessary in some patients to minimize risk of hypoglycemia. Closely monitor blood glucose in patients on concomitant insulin, especially those on high doses, or insulin secretagogue.

Cases of progression of autoimmune membranoproliferative glomerulonepholis (associated with massive proteinuria and renal failure) were observed in some patients with acquired generalized lipodystrophy treated with MYALEPT. A causal relationship between MYALEPT and the development and/or progression of autoimmune disease has not been established. Carefully consider the benefits and risks of MYALEPT treatment in patients with autoimmune disease.

Hypersensitivity reactions (eg, anaphylaxis, urticaria or generalized rash) have been reported. Patient should promptly seek medical advice about discontinuation of MYALEPT if a hypersensitivity reaction occurs.

MYALEPT contains benzyl alcohol when reconstituted with Bacteriostatic Water for Injection. The preservative benzyl alcohol has been associated with serious adverse events and death in pediatric patients, particularly in neonates and premature infants. Preservative-free Water for Injection is recommended for use in neonates and infants.

ADVERSE REACTIONS: Most common adverse reactions (≥10%) in clinical trials were headache, hypoglycemia, decreased weight, and abdominal pain.

Please see additional Important Safety Information throughout and accompanying full Prescribing Information including Boxed Warning.

For more information, visit myalept.com.

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Getting Started Guide



To get a patient with Generalized Lipodystrophy started on Myalept® follow 3 steps outlined in this guide.

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Visit chiesitotalcare.com or call 1-855-669-2537. We're ready to help!









Complete Risk Evaluation and Mitigation Strategy (REMS) training

Because of the risk of anti-metreleptin antibodies with neutralizing activity and risk of lymphoma, Myalept is available only through a restricted program **under a Risk Evaluation and Mitigation Strategy (REMS) called the Myalept REMS Program**.

A Risk Evaluation and Mitigation Strategy (REMS) is a strategy to manage known or potential serious risks associated with a drug product and is required by the Food and Drug Administration (FDA) to ensure that the benefits of a drug outweigh its risks.

To get your REMS certification:

- Visit the Myalept REMS Program website to review the Myalept REMS Program introductory information sheet and Prescribing Information
- Review the Myalept REMS Training Program, and fill out the Prescriber Enrollment Form. Fax completed forms to 1-877-328-9682.



Scan the code to visit the site.



Fill out the Prescription Forms

A prescription for Myalept can only be written on the Myalept REMS Authorization Form. Complete, sign, and fax the completed form to 1-877-328-9682 for each new prescription.



Scan the code to download the form.

IMPORTANT SAFETY INFORMATION

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Please see additional Important Safety Information throughout and accompanying full Prescribing Information.



MYALEPT® REMS Program Prescription Authorization Form

All fields are required.

INSTRUCTIONS For each new prescription, you must:

- Confirm the patient has a diagnosis consistent with generalized lipodystrophy.
- Complete this Prescriber Attestation by checking the box adjacent to each statement below to indicate that you attest to each statement.
- Sign and date at the bottom of the Attestation.

For Reconstitution

• THEN, complete the prescription and patient information on reverse side.

PRINT and FAX both pages of the completed form to MYALEPT REMS at 1-877-328-9682.

This prescription for	MYALEPT is va	llid for dispensing only	/ if received by fa	Х.					
PATIENT INFORMAT	TION								
Full Name (first, middle, last)					Date o Birth	f			
☐ Existing Patient	☐ New Patien	t Indication for Use		eneralized lipodystrop neralized lipodystroph					A
PRESCRIBER ATTES	STATION								
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use in patients									
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 I understand I mu abnormalities and 		Address			City			State	Zip
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HERE Signate	ure	Email			Pare (if ag	nt/Guardian oplicable)			
PRESCRIBER INFOR		Alternate Caregiver/ Contact Name			Alter Cont	rnate Caregiv tact Email	rer/		
Full Name (first, middl		Alternate Caregiver/ Contact Phone			OK t	o leave messa	age with Alternat	e Caregiver/C	ontact? Yes No
Practice/Facility Name	e	INSURANCE INFORM	ATION - Please co	opy both sides and att	ach all me	dical and pr	escription insu	rance cards.	
Address 1		Insurance Company Pho	one		Insur	red Employer			
Address 2 (optional)		Insured Name			Rela	tionship to Pa	atient		
Phone		Insurance Policy #			Insu	rance Group	# (if applicable)		
OFFICE CONTACT		Prescription Card?	res 🗌 No If yes, o	carrier			Is the patient e	eligible for Me	edicare? 🗌 Yes 🔲 No
Full Name (first last)		Medicare Policy #			Med (if a	icare Group ‡ oplicable)	#		
f different from above	:	SHIPPING INFORMAT	ION						
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		(first last) Address (if different			City	ena iniciai sin	pinent to presci	State	Zip
1YALEPT is a registered	trademark	from above)	LIECTION PRES	DIDTION					
2023 Amryt Pharmaceu		MYALEPT 5 mg/mL II	_		oco for our	ago tura		inits	
		Maintenance Dose:		☐ 5 mg ► Convert do				_	
		Days Supply	Refills #	Patient We		yringe type _		ight Taken	
		Directions: Inject	mL under the ski	n times(s) daily	(e.g., by sul	bcutaneous i	njection)		
		Attach or List Concomitant Meds			Aller				☐ No Known Drug Allergies (NKDA
		MYALEPT SUPPLIES I	DDESCRIPTION						3.00 (

Required supplies (please note - the maximum number per supply is specified below. Pharmacy will adjust to individual patient needs).

For Administration

QTY # Refills #

QTY # Refills #



Confirm patient diagnosis

Myalept Can Only Be Prescribed in Accordance with the FDA-Approved Indication:

Myalept is indicated as an adjunct to diet as replacement therapy to treat the complications of leptin-deficiency in patients with congenital or acquired generalized lipodystrophy.



Complete prescriber attestation

Attest patients have a diagnosis consistent with congenital or acquired generalized lipodystrophy.



Complete the prescription and confirm dosing



Once you have completed the form

1. Attach copies of patient insurance and prescription cards – front and back.

2. First prescription for the patient:

ALL PRESCRIPTIONS MUST BE FAXED. Fax completed form to Chiesi Total CareSM at 1-877-328-9682. **Please complete one form per patient.**

3. Subsequent prescriptions:

All prescriptions must be faxed on the official REMS prescription form. Some states, such as New York, may also require an e-Rx. In these states, both the REMS form and e-Rx are required. The e-Rx cannot be used in place of the REMS Prescription Authorization Form. Please search for "Accredo" in your EMR/HMR's e-prescribing software.

4. Let your patients know they will be receiving a call from Chiesi Total Care.

A member of the Chiesi Total Care team will contact patients to complete and fulfill their prescriptions for Myalept.



The fillable PDF can be downloaded and saved for future use. Scan the QR code to download a copy.





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Cases of progression of autoimmune hepatitis and membranoproliferative glomerulonephritis (associated with massive proteinuria and renal failure) were observed in some patients with acquired generalized lipodystrophy treated with MYALEPT. A causal relationship between MYALEPT and the development and/or progression of autoimmune disease has not been established. Carefully consider the benefits and risks of MYALEPT treatment in patients with autoimmune disease.

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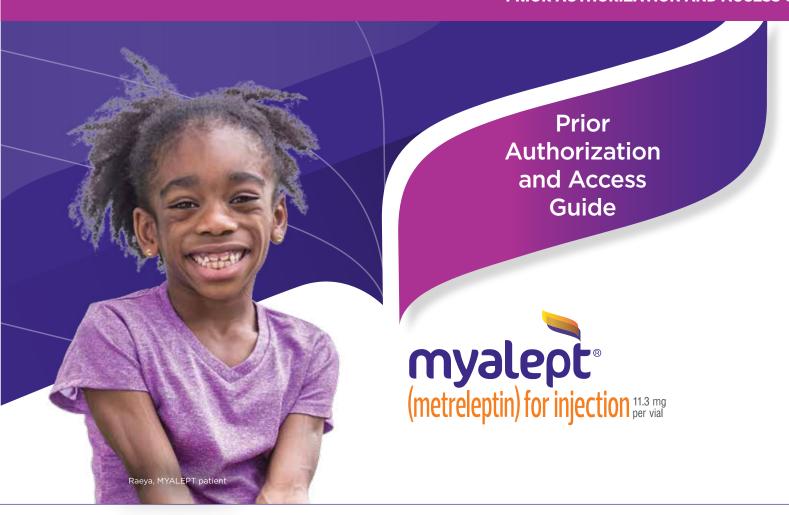
Reference: 1. Myalept® (metreleptin) Prescribing Information. Amryt, February 2022.

For more information, visit myalept.com.

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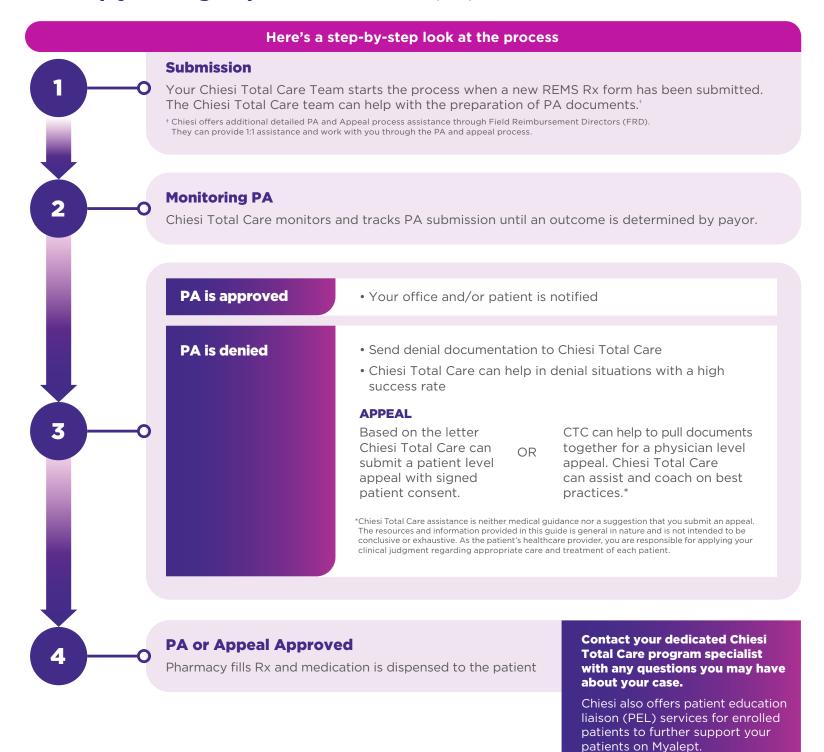
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Chiesi Total Care[™] (CTC) will submit for insurance reimbursement and help you navigate prior authorization (PA).



PA denied? Chiesi Total Care is here to help.

It's not uncommon for the first PA submission to be denied. With a long track record of success in gaining PA and appeal approvals, Chiesi Total Care is here to provide assistance with the appeal process. Chiesi Total Care will assist in providing additional resources and/or publications depending on the reasons for denial. To request a copy of an additional resource or publication, please reach out directly to us.medical@chiesi.com.

We provide updates on your patient's therapy and alert the office should there be any concerns. We also support patients by helping them cope with side effects and answering questions.



We can help by:

- Alerting when to refill or when refills are being missed
- Counseling patients on managing side effects
- Providing 24/7 pharmacist access
- Enrolling patients in the Myalept Copay Program patients may pay as little as \$0 if eligible[‡]

‡ Please refer to the full Terms and Conditions in the back pocket for additional eligibility requirements.

Here is a checklist of best practices for Prior Authorization submission:
Include pertinent clinical notes, dates, and laboratory findings
☐ Include medical rationale for why the patient cannot use preferred formulary drugs
☐ Include prescribing practitioner NPI number and contact information
Include therapeutic alternatives that were tried in the past, include documentation as to why it was inadequate

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Sample Letter of Appeal

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blue.
Select all the text and change the font to black so the whole document appears
as one letter

Use the list above as a checklist to make sure you have completed these steps prior to sending. It is important to follow these steps to ensure the letter is clear and concise.

[Insurance Company] [Address] [City, State, Zip] Re: [Patient Name]
[Policy #]
[DOB]
[Address]
[City, State, Zip]

To Whom It May Concern:

I am writing to appeal the denial of benefits for the use of [Product name (generic name)] for services requested for [Patient Name, ID#, Group #]. Included in this letter of appeal are information on the treatment rationale, medical records, medical necessity data and medical studies confirming currently prescribed product as an effective treatment for the diagnosis associated with [ICD10 Code].

Treatment Rationale:

[Provide information on patient response and history to past treatments and anticipated prognosis and rationale for the currently prescribed product].

Outline of Medical Studies:

[Outline a brief overview of the studies evaluating the use of the currently prescribed product in this condition and/or patient population. Remember to include the FDA approved indications and usage].

Medical Record Information:

[Highlight key dates and entries of the medical record how the currently prescribed product is used].

Per the included medical information, it is my professional opinion that the currently prescribed product is medically necessary in treating the patient and the denials for the patient's use of the drug should be reversed. Please call my office at [Office Phone Number] if I can provide further information or speak with a review board to appeal the denial of coverage decision. I look forward to reaching resolution of overturning the denied status of the currently prescribed product for this patient.

Sincerely,

[Physician Name and Signature]

[Phone Number]

Enclosure: [Original denial notification copy]

Sample Letter of Medical Necessity

Please Note: By downloading materials from this website, you agree to all the following. These materials are available for download and public personal use. These materials have no value and are not to be re-sold or repurposed. They are solely for your personal use. No purchase from or relationship with Chiesi Total CareSM is required to download or use these materials. Chiesi Total CareSM makes no representations or warranties about these materials or their fitness for any specific use. Chiesi Total CareSM is not responsible for any changes made to these template documents. All billing and coding decisions are the responsibility of the relevant physician. Chiesi Total CareSM does not guarantee any specific reimbursement or favorable results.

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To Whom It May Concern:

I am writing this letter of medical necessity on behalf of [Patient Name, ID#, Group #] to request coverage for [Product name (generic name)]. Included in this letter of medical necessity is information on the treatment rationale, medical records, medical necessity data and medical studies confirming currently prescribed product as an effective treatment for the diagnosis associated with [ICD10 Code].

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[Highlight key dates and entries of the medical record how the currently prescribed product is used].

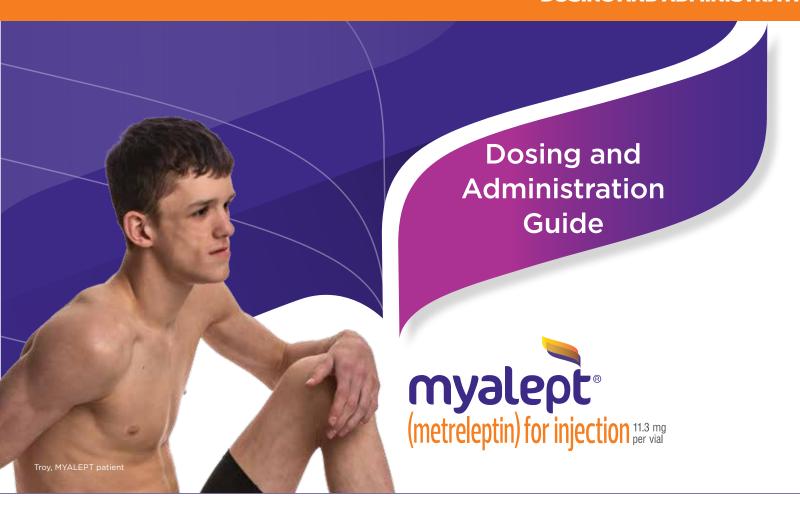
Per the included medical information, it is my professional opinion that the currently prescribed product is medically necessary in treating the patient and the denials for the patient's use of the drug should be reversed. Please call my office at [Office Phone Number] if I can provide further information.

Sincerely,

[Physician Name and Signature]

[Phone Number]

Enclosure: [As required]



IMPORTANT SAFETY INFORMATION

INDICATION: MYALEPT* (metreleptin) for injection is a leptin analog indicated as an adjunct to diet as replacement therapy to treat the complications of leptin deficiency in patients with congenital or acquired generalized lipodystrophy.

LIMITATIONS OF USE: The safety and effectiveness of MYALEPT for the treatment of complications of partial lipodystrophy or for the treatment of liver disease, including non-alcoholic steatohepatitis (NASH), have not been established.

MYALEPT is not indicated for use in patients with HIV-related lipodystrophy. MYALEPT is not indicated for use in patients with metabolic disease, including diabetes mellitus and hypertriglyceridemia, without concurrent evidence of generalized lipodystrophy.

Please see additional Important Safety Information throughout and accompanying full Prescribing Information.

WARNING: RISK OF ANTI-METRELEPTIN ANTIBODIES WITH NEUTRALIZING ACTIVITY AND RISK OF LYMPHOMA

Anti-metreleptin antibodies with neutralizing activity have been identified in patients treated with MYALEPT. The consequences of these neutralizing antibodies are not well characterized but could include inhibition of endogenous leptin action and/or loss of MYALEPT efficacy. Severe infection and/or worsening metabolic control have been reported.

Test for anti-metreleptin antibodies with neutralizing activity in patients who develop severe infections or show signs suspicious for loss of MYALEPT efficacy during treatment. Contact Amryt Pharmaceuticals DAC at 1-866-216-1526 for neutralizing antibody testing of clinical samples.

T-cell lymphoma has been reported in patients with acquired generalized lipodystrophy, both treated and not treated with MYALEPT. Carefully consider the benefits and risks of treatment with MYALEPT in patients with significant hematologic abnormalities and/or acquired generalized lipodystrophy.

Because of these risks associated with the development of antimetreleptin antibodies that neutralize endogenous leptin and/or MYALEPT and the risk for lymphoma, MYALEPT is available only through a restricted program under a Risk Evaluation and Mitigation Strategy (REMS) called the MYALEPT REMS PROGRAM.

Visit chiesitotalcare.com or call 1-855-669-2537. We're ready to help!





Myalept® is a once-daily subcutaneous injection

- Myalept should be administered once daily at the same time every day, without regard to the timing of meals.
- If a dose is missed, patients should be instructed to administer the dose as soon as noticed, and resume the normal dosing schedule the next day.

Recommended daily dose of Myalept for pediatric and adult patients					
Baseline weight	Starting daily dose (injection volume)	Dose adjustments (injection volume)	Maximum daily dose (injection volume)		
≤40 kg (males and females)	0.06 mg/kg (0.012 mL/kg)	0.02 mg/kg (0.004 mL/kg)	0.13 mg/kg (0.026 mL/kg)		
Males >40 kg	2 .5 mg (0.5 mL)	1.25 mg-2.5 mg	10 mg (2 ml.)		
Females >40 kg	9 5 mg (1 mL)	(0.25 mL-0.5 mL)	10 mg (2 mL)		

Based on clinical response (e.g., inadequate metabolic control) or other considerations (e.g., tolerability issues, excessive weight loss [especially in pediatric patients]), Myalept dose may be decreased or increased to the maximum dose listed in the table above.

Sample dosing for patients ≤40 kg

	Example Dosing for Patients ≤40 kg				
Weight	Starting Dose	Dose Adjustment	Maximum Dose		
5 kg	0.30 mg (0.06 mL or 6 Units)	0.10 mg (0.02 mL or 2 Units)	0.65 mg (0.13 mL or 13 Units)		
10 kg	0.60 mg (0.12 mL or 12 Units)	0.20 mg (0.04 mL or 4 Units)	1.3 mg (0.26 mL or 26 Units)		
15 kg	0.90 mg (0.18 mL or 18 Units)	0.30 mg (0.06 mL or 6 Units)	1.95 mg (0.39 mL or 39 Units)		
20 kg	1.2 mg (0.24 mL or 24 Units)	0.40 mg (0.08 mL or 8 Units)	2.6 mg (0.52 mL or 52 Units)		
25 kg	1.5 mg (0.3 mL or 30 Units)	0.50 mg (0.1 mL or 10 Units)	3.25 mg (0.65 mL or 65 Units)		
30 kg	1.8 mg (0.36 mL or 36 Units)	0.60 mg (0.12 mL or 12 Units)	3.9 mg (0.78 mL or 78 Units)		
35 kg	2.1 mg (0.42 mL or 42 Units)	0.70 mg (0.14 mL or 14 Units)	4.55 mg (0.91 mL or 91 Units)		
40 kg	2.4 mg (0.48 mL or 48 Units)	0.80 mg (0.16 mL or 16 Units)	5.2 mg (1.03 mL or 103 Units)		

See Instructions for Use for more information on conversion of Myalept dose to unit measurement for injection.

IMPORTANT SAFETY INFORMATION

ADVERSE REACTIONS: Most common adverse reactions (≥10%) in clinical trials were headache, hypoglycemia, decreased weight, and abdominal pain.

Please see additional Important Safety Information throughout and accompanying full Prescribing Information.



In patients at risk for hypoglycemia

- Dosage adjustments, including possible large reductions, of insulin or insulin secretagogue may be necessary in some patients to minimize the risk of hypoglycemia.
- When treating patients concomitantly with Myalept and insulin therapy, close monitoring of blood glucose levels is recommended.



In patients at risk for pancreatitis

- Tapering of the dose over a 1-week period is recommended.
- During tapering, monitor triglyceride levels and consider initiating or adjusting the dose of lipid-lowering medications as needed.
- Signs and/or symptoms consistent with pancreatitis should prompt an appropriate clinical evaluation.

Myalept Storage and Preparation



Healthcare professionals should provide proper training to patients and caregivers

• Prior to self-use, patients and caregivers should prepare and administer the first dose of Myalept under the supervision of a qualified healthcare professional.



Myalept storage and reconstitution

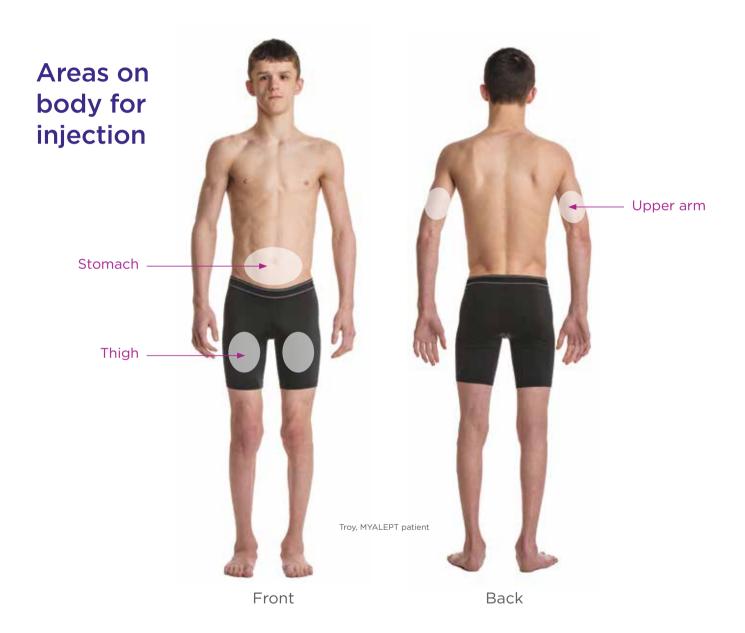
- Healthcare professionals should instruct patients to store the vials of lyophilized powder in the refrigerator as soon as they receive them.
- Myalept can be reconstituted aseptically with 2.2 mL of sterile Bacteriostatic Water for Injection (BWFI), USP (0.9% benzyl alcohol), or with 2.2 mL of sterile Water for Injection (WFI).

Myalept reconstitution and storage guidelines				
Diluent for reconstitution	Storage guidelines and recommendations			
WFI	For use in neonates and infants, reconstitute with preservative-free sterile WFI. When reconstituted with sterile WFI, Myalept should be administered immediately.			
	Unused reconstituted solution cannot be saved for later use and should be discarded.			
BWFI	• For use in pediatric and adult patients, reconstitute with BWFI. When reconstituted with BWFI, Myalept solution can be used within 3 days when stored in the refrigerator between 36°F and 46°F (2°C and 8°C) and protected from light.			
	Discard unused reconstituted solution after 3 days. Attach the supplied sticker to the vial and enter the discard date.			

Myalept administration

Myalept is given as a subcutaneous injection

Healthcare professionals should instruct patients and caregivers on the proper subcutaneous injection technique, using care to avoid intramuscular injection in patients with minimal subcutaneous adipose tissue.







IMPORTANT SAFETY INFORMATION

INDICATION: MYALEPT* (metreleptin) for injection is a leptin analog indicated as an adjunct to diet as replacement therapy to treat the complications of leptin deficiency in patients with congenital or acquired generalized lipodystrophy.

LIMITATIONS OF USE: The safety and effectiveness of MYALEPT for the treatment of complications of partial lipodystrophy or for the treatment of liver disease, including non-alcoholic steatohepatitis (NASH), have not been established.

MYALEPT is not indicated for use in patients with HIV-related lipodystrophy. MYALEPT is not indicated for use in patients with metabolic disease, including diabetes mellitus and hypertriglyceridemia, without concurrent evidence of generalized lipodystrophy.

WARNING: RISK OF ANTI-METRELEPTIN ANTIBODIES WITH NEUTRALIZING ACTIVITY AND RISK OF LYMPHOMA

Anti-metreleptin antibodies with neutralizing activity have been identified in patients treated with MYALEPT. The consequences of these neutralizing antibodies are not well characterized but could include inhibition of endogenous leptin action and/or loss of MYALEPT efficacy. Severe infection and/or worsening metabolic control have been reported. Test for anti-metreleptin antibodies with neutralizing activity in patients who develop severe infections or show signs suspicious for loss of MYALEPT efficacy during treatment. Contact Amryt Pharmaceuticals DAC at 1-866-216-1526 for neutralizing antibody testing of clinical samples.

T-cell lymphoma has been reported in patients with acquired generalized lipodystrophy, both treated and not treated with MYALEPT. Carefully consider the benefits and risks of treatment with MYALEPT in patients with significant hematologic abnormalities and/or acquired generalized lipodystrophy.

Because of these risks associated with the development of anti-metreleptin antibodies that neutralize endogenous leptin and/or MYALEPT and the risk for lymphoma, MYALEPT is available only through a restricted program under a Risk Evaluation and Mitigation Strategy (REMS) called the MYALEPT REMS PROGRAM.

contraindicated in general obesity not associated with congenital leptin deficiency. MYALEPT has not been shown to be effective in treating general obesity. The development of anti-metreleptin neutralizing antibodies have been reported in obese patients treated with MYALEPT. MYALEPT is contraindicated in patients with prior severe hypersensitivity reactions to metreleptin or to any of its components.

WARNINGS AND PRECAUTIONS: A dose adjustment, including possible large reductions, of insulin or insulin secretagogue may be necessary in some patients to minimize risk of hypoglycemia. Closely monitor blood glucose in patients on concomitant insulin, especially those on high doses, or insulin secretagogue.

Cases of progression of autoimmune hepatitis and membranoproliferative glomerulonephritis (associated with massive proteinuria and renal failure) were observed in some patients with acquired generalized lipodystrophy treated with MYALEPT. A causal relationship between MYALEPT and the development and/or progression of autoimmune disease has not been established. Carefully consider the benefits and risks of MYALEPT treatment in patients with autoimmune disease.

Hypersensitivity reactions (eg, anaphylaxis, urticaria or generalized rash) have been reported. Patient should promptly seek medical advice about discontinuation of MYALEPT if a hypersensitivity reaction occurs.

MYALEPT contains benzyl alcohol when reconstituted with Bacteriostatic Water for Injection. The preservative benzyl alcohol has been associated with serious adverse events and death in pediatric patients, particularly in neonates and premature infants. Preservative-free Water for Injection is recommended for use in neonates and infants.

ADVERSE REACTIONS: Most common adverse reactions (≥10%) in clinical trials were headache, hypoglycemia, decreased weight, and abdominal pain.

Please see additional Important Safety Information throughout and accompanying full Prescribing Information including Boxed Warning.



HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use MYALEPT safely and effectively. See full prescribing information for MYALEPT.

MYALEPT® (metreleptin) for injection, for subcutaneous use Initial U.S. Approval: 2014

WARNING: RISK OF ANTI-METRELEPTIN ANTIBODIES WITH NEUTRALIZING ACTIVITY AND RISK OF LYMPHOMA

See full prescribing information for complete boxed warning. Anti-metreleptin antibodies with neutralizing activity have been identified in patients treated with MYALEPT. The consequences are not well characterized but could include inhibition of endogenous leptin action and loss of MYALEPT efficacy. Worsening metabolic control and/or severe infection have been reported. Test for anti-metreleptin antibodies with neutralizing activity in patients with severe infections or loss of efficacy during MYALEPT treatment. Contact Amryt Pharmaceuticals DAC at 1-866-216-1526 for neutralizing antibody testing. (4.1, 5.1)

T-cell lymphoma has been reported in patients with acquired generalized lipodystrophy, both treated and not treated with MYALEPT. Carefully consider the benefits and risks of treatment with MYALEPT in patients with significant hematologic abnormalities and/or acquired generalized lipodystrophy. (5.2) MYALEPT is available only through a restricted program called the MYALEPT REMS PROGRAM. (5.3)

INDICATIONS AND USAGE

MYALEPT is a leptin analog indicated as an adjunct to diet as replacement therapy to treat the complications of leptin deficiency in patients with congenital or acquired generalized lipodystrophy. (1)

Limitations of Use

- The safety and effectiveness of MYALEPT for the treatment of complications of partial lipodystrophy have not been established. (1)
- The safety and effectiveness of MYALEPT for the treatment of liver disease, including nonalcoholic steatohepatitis (NASH), have not been established. (1)
- MYALEPT is not indicated for use in patients with HIV-related lipodystrophy. (1)
- MYALEPT is not indicated for use in patients with metabolic disease, without concurrent evidence of generalized lipodystrophy. (1)

DOSAGE AND ADMINISTRATION

Administer as a subcutaneous injection once daily after the lyophilized cake is reconstituted with Bacteriostatic Water for Injection (BWFI) or preservative-free sterile Water for Injection (WFI). (2.1)

The recommended daily dosages are:

- Body weight 40 kg or less: starting dose 0.06 mg/kg/day, increase or decrease by 0.02 mg/kg to a maximum daily dose of 0.13 mg/kg. (2.1)
- Males greater than 40 kg body weight: starting dose 2.5 mg/day, increase
 or decrease by 1.25 mg to 2.5 mg/day to a maximum dose of 10 mg/day.
 (2.1)
- Females greater than 40 kg body weight: starting dose 5 mg/day, increase or decrease by 1.25 mg to 2.5 mg/day to a maximum dose of 10 mg/day. (2.1)

DOSAGE FORMS AND STRENGTHS

MYALEPT is supplied as a sterile, white, solid, lyophilized cake of 11.3 mg metreleptin per vial to deliver 5 mg per mL when reconstituted in 2.2 mL of BWFI or WFI. (3)

CONTRAINDICATIONS

- General obesity not associated with congenital leptin deficiency. (4.1)
- Hypersensitivity to metreleptin. (4.2)

WARNINGS AND PRECAUTIONS

- Anti-metreleptin antibodies with neutralizing activity: Could inhibit endogenous leptin action and/or result in loss of MYALEPT efficacy.
 Test for neutralizing antibodies in patients with severe infections or loss of efficacy during MYALEPT treatment. (5.1)
- T-cell lymphoma: Carefully consider benefits and risks of treatment with MYALEPT in patients with significant hematologic abnormalities and/or acquired generalized lipodystrophy. (5.2)
- Hypoglycemia: A dose adjustment, including possible large reductions, of insulin or insulin secretagogue may be necessary. Closely monitor blood glucose in patients on concomitant insulin or insulin secretagogue therapy. (5.4)
- Autoimmunity: Autoimmune disorder progression has been observed in patients treated with MYALEPT. Carefully consider benefits and risks of MYALEPT treatment in patients with autoimmune disease. (5.5)
- Hypersensitivity: Hypersensitivity reactions (e.g., anaphylaxis, urticaria
 or generalized rash) have been reported. Patient should promptly seek
 medical advice regarding suspected reactions. (5.6)
- Benzyl Alcohol Toxicity: Preservative-free sterile WFI recommended for neonates and infants. (5.7)

ADVERSE REACTIONS

Most common in clinical trials (\geq 10%): headache, hypoglycemia, decreased weight, abdominal pain. (5.4, 6.1)

To report SUSPECTED ADVERSE REACTIONS, contact Amryt Pharmaceuticals DAC at 1-855-303-2347 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

See 17 for PATIENT COUNSELING INFORMATION and Medication Guide

Revised: 02/2022

FULL PRESCRIBING INFORMATION: CONTENTS*

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2 DOSAGE AND ADMINISTRATION

- 2.1 Recommended Dosing
- 2.2 MYALEPT Preparation and Storage
- 2.3 Administration Instructions
- $2.4 \qquad Dosage \ Adjustments \ of \ Medications \ Known \ to \ Cause \\ Hypoglycemia$
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4 CONTRAINDICATIONS

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FULL PRESCRIBING INFORMATION

WARNING: RISK OF ANTI-METRELEPTIN ANTIBODIES WITH NEUTRALIZING ACTIVITY AND RISK OF LYMPHOMA

Anti-metreleptin antibodies with neutralizing activity have been identified in patients treated with MYALEPT. The consequences of these neutralizing antibodies are not well characterized but could include inhibition of endogenous leptin action and/or loss of MYALEPT efficacy. Severe infection and/or worsening metabolic control have been reported. Test for anti-metreleptin antibodies with neutralizing activity in patients who develop severe infections or show signs suspicious for loss of MYALEPT efficacy during treatment. Contact Amryt Pharmaceuticals DAC at 1-866-216-1526 for neutralizing antibody testing of clinical samples [see *Contraindications (4.1)* and *Warnings and Precautions (5.1)*].

T-cell lymphoma has been reported in patients with acquired generalized lipodystrophy, both treated and not treated with MYALEPT. Carefully consider the benefits and risks of treatment with MYALEPT in patients with significant hematologic abnormalities and/or acquired generalized lipodystrophy [see *Warnings and Precautions (5.2)*].

Because of these risks associated with the development of anti-metreleptin antibodies that neutralize endogenous leptin and/or MYALEPT and the risk for lymphoma, MYALEPT is available only through a restricted program under a Risk Evaluation and Mitigation Strategy (REMS) called the MYALEPT REMS PROGRAM [see *Warnings and Precautions (5.3)*].

1 INDICATIONS AND USAGE

1.1 Patients with Generalized Lipodystrophy

MYALEPT (metreleptin) for injection is indicated as an adjunct to diet as replacement therapy to treat the complications of leptin deficiency in patients with congenital or acquired generalized lipodystrophy.

Limitations of Use

- The safety and effectiveness of MYALEPT for the treatment of complications of partial lipodystrophy have not been established.
- The safety and effectiveness of MYALEPT for the treatment of liver disease, including nonalcoholic steatohepatitis (NASH), have not been established.
- MYALEPT is not indicated for use in patients with HIV-related lipodystrophy.

• MYALEPT is not indicated for use in patients with metabolic disease, including diabetes mellitus and hypertriglyceridemia, without concurrent evidence of congenital or acquired generalized lipodystrophy.

2 DOSAGE AND ADMINISTRATION

2.1 Recommended Dosing

See Table 1 for the recommended daily dose and maximum recommended daily dose in adults and pediatric patients.

Based on clinical response (e.g., inadequate metabolic control) or other considerations (e.g., tolerability issues, excessive weight loss [especially in pediatric patients]), MYALEPT dosage may be decreased or increased to the maximum dosage listed in Table 1.

Table 1: MYALEPT Recommended Dosage

Baseline weight	Starting daily	Dose adjustments	Maximum daily	
	dose	(injection volume)	dose	
	(injection volume)		(injection volume)	
Less than or equal to 40	0.06 mg/kg	0.02 mg/kg	0.13 mg/kg	
kg	(0.012 mL/kg)	(0.004 mL/kg)	(0.026 mL/kg)	
(males and females)				
Males greater than 40 kg	2.5 mg	1.25 mg (0.25 mL)	10 mg	
	(0.5 mL)	to	(2 mL)	
		2.5 mg (0.5 mL)		
Females greater than 40	5 mg	1.25 mg (0.25 mL)	10 mg	
kg	(1 mL)	to	(2 mL)	
		2.5 mg (0.5 mL)		

In pediatric patients, small volumes for administration can result in medication errors when measured incorrectly [see Dosage and Administration (2.3), Adverse Reactions (6.3)]. Table 2 provides example doses and volumes by weight. For patients using insulin syringes, the volume conversion is 100 Units/mL.

Table 2: Example Dosing Chart for Patients Less than or Equal to 40 kg

Weigh	Starting Dose	Dose Adjustment	Maximum Dose
t			
5 kg	0.30 mg (0.06 mL or 6 Units)	0.10 mg (0.02 mL or 2 Units)	0.65 mg (0.13 mL or 13 Units)
10 kg	0.60 mg (0.12 mL or 12 Units)	0.20 mg (0.04 mL or 4 Units)	1.3 mg (0.26 mL or 26 Units)
15 kg	0.90 mg (0.18 mL or 18 Units)	0.30 mg (0.06 mL or 6 Units)	1.95 mg (0.39 mL or 39 Units)
20 kg	1.2 mg (0.24 mL or 24 Units)	0.40 mg (0.08 mL or 8 Units)	2.6 mg (0.52 mL or 52 Units)

25 kg	1.5 mg (0.3 mL or 30 Units)	0.50 mg (0.1 mL or 10 Units)	3.25 mg (0.65 mL or 65 Units)
30 kg	1.8 mg (0.36 mL or 36 Units)	0.60 mg (0.12 mL or 12 Units)	3.9 mg (0.78 mL or 78 Units)
35 kg	2.1 mg (0.42 mL or 42 Units)	0.70 mg (0.14 mL or 14 Units)	4.55 mg (0.91 mL or 91 Units)
40 kg	2.4 mg (0.48 mL or 48 Units)	0.80 mg (0.16 mL or 16 Units)	5.2 mg (1.03 mL or 103 Units)

MYALEPT should be administered once daily at the same time every day. MYALEPT can be administered any time of day without regard to the timing of meals.

Instruct patients that if a dose is missed, administer the dose as soon as noticed, and resume the normal dosing schedule the next day.

2.2 MYALEPT Preparation and Storage

Healthcare practitioners should provide proper training to patients and caregivers regarding how to prepare and administer the correct dose of MYALEPT prior to self-use. The patients and caregivers should prepare and administer the first dose of MYALEPT under the supervision of a qualified healthcare professional.

Instruct patients to store the vials of lyophilized powder in their carton in the refrigerator as soon as received [see *How Supplied/Storage and Handling (16.2)*].

MYALEPT can be reconstituted aseptically with 2.2 mL of sterile Bacteriostatic Water for Injection (BWFI), USP (0.9% benzyl alcohol), or with 2.2 mL of sterile Water for Injection (WFI).

When reconstituted in BWFI, MYALEPT solution can be used within 3 days when stored in the refrigerator between 36°F and 46°F (2°C and 8°C) and protected from light [see *How Supplied/Storage and Handling (16.2)*]. Discard unused reconstituted solution after 3 days. Attach the supplied sticker to the vial and enter the discard date.

For use in neonates and infants, reconstitute with preservative-free sterile WFI [see *Warnings and Precautions (5.7)* and *Use in Specific Populations (8.4)*]. When reconstituted in sterile WFI, MYALEPT should be administered immediately. Unused reconstituted solution cannot be saved for later use and should be discarded.

Reconstitution of the Lyophilized Powder

Instruct patients to follow the directions below for reconstitution of the lyophilized powder:

- a) Remove the vial containing the MYALEPT lyophilized powder from the refrigerator and allow the vial to warm to room temperature prior to use.
- b) Visually inspect the vial containing MYALEPT. The cake of lyophilized powder should be intact and white in color.
- c) Using a 3-mL syringe with a 22-gauge or smaller diameter needle withdraw 2.2 mL of sterile Bacteriostatic Water for Injection (BWFI) or preservative-free sterile Water for Injection (WFI). Do not reconstitute MYALEPT with other diluents.

- d) Inject the BWFI or WFI into the vial containing the lyophilized powder of MYALEPT, slowly injecting down the side of the vial. It is normal for some bubbles to form.
- e) Remove the needle and syringe from the vial and **gently swirl** the contents to reconstitute. **Do not shake or vigorously agitate.** When properly mixed, the MYALEPT reconstituted solution should be clear and free of clumps or dry powder, bubbles or foam. Do not use the solution if discolored or cloudy, or if particulate matter remains.
- f) Regarding the compatibility of MYALEPT reconstituted solution with other solutions:
 - Do not mix with, or transfer into, the contents of another vial of MYALEPT.
 - Do not add other medications, including insulin. Use a separate syringe for insulin injections.

See the MYALEPT Instructions for Use for complete administration instructions. The instructions can also be found at www.myalept.com.

2.3 Administration Instructions

Healthcare practitioners should instruct patients and caregivers on the proper subcutaneous injection technique with care to avoid intramuscular injection in patients with minimal subcutaneous adipose tissue. Never administer MYALEPT intravenously or intramuscularly.

Instruct patients to follow the recommended injection technique:

- a) Using a 1-mL or smaller syringe with a needle appropriate for subcutaneous injection, withdraw the prescribed dose of MYALEPT reconstituted solution.
- b) Remove any large air pockets or large bubbles from the filled syringe prior to administration. Some small bubbles may remain in the syringe.
- c) Administer MYALEPT into the subcutaneous tissue of the abdomen, thigh or upper arm. Advise patients to use a different injection site each day when injecting in the same region. After choosing an injection site, pinch the skin and at a 45-degree angle, inject the MYALEPT reconstituted solution subcutaneously. Avoid intramuscular injection, especially in patients with minimal subcutaneous adipose tissue.
- d) Doses exceeding 1 mL can be administered as two injections (the total daily dose divided equally) to minimize potential injection-site discomfort due to injection volume. When dividing doses due to volume, doses can be administered one after the other.
- e) In pediatric patients, small volumes for administration can result in medication errors when measured incorrectly. Smaller syringe sizes may be more appropriate for pediatric patients weighing less than or equal to 25 kg. Ensure the proper size syringe is selected. Table 2 provides example doses and volumes by weight [see Dosage and Administration (2.1), Adverse Reactions (6.3)].

Do not mix MYALEPT with insulin. Use a separate syringe for each medication. If MYALEPT and insulin are administered at the same time of day, they may be injected in the same body area using two different injection sites.

See the MYALEPT Instructions for Use for complete administration instructions. The instructions can also be found at www.myalept.com.

2.4 Dosage Adjustments of Medications Known to Cause Hypoglycemia

Dosage adjustments, including possible large reductions, of insulin or insulin secretagogue (e.g., sulfonylurea) may be necessary in some patients to minimize the risk of hypoglycemia [see *Warnings and Precautions (5.4)* and *Adverse Reactions (6.1)*]. Closely monitor blood glucose in patients on concomitant insulin therapy, especially those on high doses, or insulin secretagogue (e.g., sulfonylurea) when treating with MYALEPT.

2.5 Discontinuation in Patients at Risk for Pancreatitis

When discontinuing MYALEPT therapy in patients with risk factors for pancreatitis (e.g., history of pancreatitis, severe hypertriglyceridemia), tapering of the dose over a one-week period is recommended. During tapering, monitor triglyceride levels and consider initiating or adjusting the dose of lipid-lowering medications as needed. Signs and/or symptoms consistent with pancreatitis should prompt an appropriate clinical evaluation.

3 DOSAGE FORMS AND STRENGTHS

For Injection: 11.3 mg of metreleptin supplied in a vial as a sterile, white, solid, lyophilized cake (delivers 5 mg per mL of metreleptin when reconstituted with 2.2 mL of BWFI or WFI).

4 CONTRAINDICATIONS

4.1 General Obesity

MYALEPT is contraindicated in patients with general obesity not associated with congenital leptin deficiency. MYALEPT has not been shown to be effective in treating general obesity, and the development of anti-metreleptin antibodies with neutralizing activity has been reported in obese patients treated with MYALEPT [see *Warnings and Precautions* (5.1)].

4.2 Hypersensitivity

MYALEPT is contraindicated in patients with prior severe hypersensitivity reactions to metreleptin or to any of the product components. Known hypersensitivity reactions have included anaphylaxis, urticaria and generalized rash [see *Warnings and Precautions* (5.6)].

5 WARNINGS AND PRECAUTIONS

5.1 Risk for Development of Antibodies that Neutralize Endogenous Leptin and/or MYALEPT

Anti-metreleptin antibodies with *in vitro* neutralizing activity to leptin associated with adverse events consistent with loss of endogenous leptin activity and/or loss of efficacy have been identified in two patients with generalized lipodystrophy treated with MYALEPT (severe infections, increases in HbA_{1c} and triglycerides), and in three patients without lipodystrophy who received MYALEPT in clinical studies (excessive weight gain, development of glucose intolerance or diabetes mellitus). The clinical implications associated with development of anti-metreleptin antibodies with neutralizing activity are not well characterized at this time due to the small number of reports. Test for anti-metreleptin antibodies with neutralizing activity in patients who develop severe infections or show signs suspicious for loss of MYALEPT efficacy during treatment. Contact Amryt Pharmaceuticals DAC at 1-866-216-1526 for neutralizing antibody testing of clinical samples [see *Adverse Reactions* (6.2)].

5.2 Lymphoma

Three cases of T-cell lymphoma have been reported in the MYALEPT lipodystrophy program; all three patients had acquired generalized lipodystrophy. Two of these patients were diagnosed with peripheral T-cell lymphoma while receiving MYALEPT. Both had immunodeficiency and significant hematologic abnormalities including severe bone marrow abnormalities before the start of MYALEPT treatment. A separate case of anaplastic large cell lymphoma was reported in a patient receiving MYALEPT who did not have hematological abnormalities before treatment.

Lymphoproliferative disorders, including lymphomas, have been reported in patients with acquired generalized lipodystrophy not treated with MYALEPT. A causal relationship between MYALEPT treatment and the development

and/or progression of lymphoma has not been established. Acquired lipodystrophies are associated with autoimmune disorders, and autoimmune disorders are associated with an increased risk of malignancies including lymphomas.

The benefits and risks of MYALEPT treatment should be carefully considered in patients with acquired generalized lipodystrophy and/or those with significant hematologic abnormalities (including leukopenia, neutropenia, bone marrow abnormalities, lymphoma, and/or lymphadenopathy).

5.3 MYALEPT REMS Program

MYALEPT is available only through a restricted distribution program under a REMS, called the MYALEPT REMS Program, because of the risks associated with the development of anti-metreleptin antibodies that neutralize endogenous leptin and/or MYALEPT and the risk for lymphoma [see *Warnings and Precautions* (5.1, 5.2)].

Notable requirements of the MYALEPT REMS Program include the following:

- Prescribers must be certified with the program by enrolling and completing training.
- Pharmacies must be certified with the program and only dispense MYALEPT after receipt of the MYALEPT REMS Prescription Authorization Form for each new prescription.

Further information is available at www.myaleptrems.com or 1-855-669-2537.

5.4 Hypoglycemia with Concomitant Use with Insulin and Insulin Secretagogues

Dosage adjustments, including possible large reductions, of insulin or insulin secretagogue (e.g., sulfonylurea) may be necessary in some patients to minimize the risk of hypoglycemia [see *Dosage and Administration (2.4)* and *Adverse Reactions (6.1)*]. Closely monitor blood glucose in patients on concomitant insulin therapy, especially those on high doses, or insulin secretagogue (e.g., sulfonylurea), when treating with MYALEPT.

5.5 Autoimmunity

Leptin plays a role in immune system homeostasis. Acquired lipodystrophies are associated with autoimmune disorders including autoimmune hepatitis and membranoproliferative glomerulonephritis. Cases of progression of autoimmune hepatitis and membranoproliferative glomerulonephritis (associated with massive proteinuria and renal failure) were observed in some patients with acquired generalized lipodystrophy treated with MYALEPT. A causal relationship between MYALEPT treatment and the development and/or progression of autoimmune disease has not been established. The potential benefits and risks of MYALEPT treatment should be carefully considered in patients with autoimmune disease.

5.6 Hypersensitivity

There have been reports of generalized hypersensitivity (e.g., anaphylaxis, urticaria or generalized rash) in patients taking MYALEPT. If a hypersensitivity reaction occurs, instruct the patient to promptly seek medical advice regarding discontinuation of MYALEPT.

5.7 Benzyl Alcohol Toxicity

MYALEPT contains benzyl alcohol when reconstituted with BWFI. MYALEPT contains no preservative when reconstituted with sterile Water for Injection (WFI). Preservative-free WFI is recommended for use in neonates and infants. The preservative benzyl alcohol has been associated with serious adverse events and death in pediatric patients, particularly in neonates and premature infants [see *Use in Specific Populations (8.4)*].

6 ADVERSE REACTIONS

6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

Open-Label, Single-Arm Study

The safety of MYALEPT was evaluated in 48 patients with generalized lipodystrophy in a single-arm, open-label study [see *Clinical Studies* (14.1)]. The median duration of exposure in this trial was 2.7 years with a range of 3.6 months to 10.9 years. The most frequent adverse reactions are summarized in Table 3.

Table 3: Adverse Reactions of 5% or Greater Incidence in Patients with Generalized Lipodystrophy Receiving MYALEPT in an Open-Label, Single-Arm Study

	All Subjects N=48 (%)
Headache	6 (13)
Hypoglycemia ¹	6 (13)
Decreased weight	6 (13)
Abdominal pain	5 (10)
Arthralgia	4 (8)
Dizziness	4 (8)
Ear infection	4 (8)
Fatigue	4 (8)
Nausea	4 (8)
Ovarian cyst	4 (8)
Upper respiratory tract infection	4 (8)
Anemia	3 (6)
Back pain	3 (6)
Diarrhea	3 (6)
Paresthesia	3 (6)
Proteinuria	3 (6)
Pyrexia	3 (6)

Hypoglycemic events were assessed as mild, moderate, severe, or life threatening based on the protocol specified definitions: Mild: Documentation of low plasma glucose values with no symptoms; Moderate: Presence of clinical symptoms requiring ingestion of glucose, self-alleviated; Severe: Presence of neuroglycopenic symptoms requiring assistance from others for alleviation; Life threatening: Loss of consciousness and/or requiring intervention by administration of intravenous glucose or intramuscular glucagon.

In patients with generalized lipodystrophy receiving MYALEPT in this study, less common adverse reactions included injection-site erythema and urticaria (N=2 [4%]).

Six patients (13%) had 7 adverse reactions of hypoglycemia, 6 of which occurred in the setting of concomitant insulin use, with or without oral antihyperglycemic agents.

Two patients (4%) had events of pancreatitis, both of whom had a medical history of pancreatitis.

6.2 Immunogenicity

As with all therapeutic proteins, there is potential for immunogenicity. Anti-metreleptin antibodies were detected in 84% (36/43) of generalized lipodystrophy patients studied in the MYALEPT trials. Total anti-metreleptin antibody titers ranged between 1:5 and 1:1,953,125. The incompleteness of the current immunogenicity database precludes understanding of the magnitude and persistence of the observed anti-drug antibody responses. Anti-metreleptin antibodies with neutralizing activity associated with adverse events consistent with loss of endogenous leptin activity and/or loss of MYALEPT efficacy were observed in 6% (2/33) of the patients with generalized lipodystrophy tested. Adverse events reported in these two patients included severe infections and worsening of metabolic control (increases in HbA_{1c} and/or triglycerides). Test for anti-metreleptin antibodies with neutralizing activity in patients who develop severe infections or show signs suspicious for loss of MYALEPT efficacy during treatment. Contact Amryt Pharmaceuticals DAC at 1-866-216-1526 for testing of clinical samples.

The detection of antibody formation is highly dependent on the sensitivity and specificity of the assay. The immunogenicity assays utilized in clinical trials lacked sensitivity, resulting in potential underestimation of the number of samples positive for anti-metreleptin antibodies with neutralizing activity. Additionally, the observed incidence of antibody (including neutralizing antibody) positivity in an assay may be influenced by several factors including assay methodology, sample handling, timing of sample collection, concomitant medications, and underlying disease. For these reasons, comparison of the incidence of antibodies to metreleptin with the incidence of antibodies to other products may be misleading.

6.3 Postmarketing Experience

The following adverse reactions have been identified during post-approval use of MYALEPT. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

- Incorrect dose administered, accidental overdose [see Dosage and Administration (2.1, 2.3)]
- Injection site reaction, including inflammation and hyperpigmentation

7 DRUG INTERACTIONS

No formal drug interaction studies were performed.

Leptin is a cytokine and may have the potential to alter the formation of cytochrome P450 (CYP450) enzymes. This should be taken into account when prescribing concomitant drugs metabolized by CYP450 (e.g., oral contraceptives and drugs with a narrow therapeutic index). The effect of metreleptin on CYP450 enzymes may be clinically relevant for CYP450 substrates with narrow therapeutic index, where the dose is individually adjusted. Upon initiation or discontinuation of MYALEPT, in patients being treated with these types of agents, therapeutic monitoring of effect (e.g., warfarin) or drug concentration (e.g., cyclosporine or theophylline) should be performed and the individual dose of the agent adjusted as needed.

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Pregnancy Exposure Registry

There is a program that monitors outcomes in women exposed to MYALEPT during pregnancy. Women who become pregnant during MYALEPT treatment are encouraged to enroll. Patients or their physicians should call 1-855-669-2537 to enroll.

Risk Summary

Available pharmacovigilance reports with the use of MYALEPT in pregnant women are insufficient to evaluate for any drug-associated risk for major birth defects, miscarriage, or adverse maternal or fetal outcomes. These reports describe similar adverse pregnancy outcomes as those documented in women with lipodystrophy (*see Clinical Considerations*). In an animal reproduction study, no adverse developmental effects were observed with subcutaneous administration of metreleptin to pregnant mice during organogenesis at doses 7- and 15-fold the maximum recommended clinical dose, based on body surface area of a 20- and 60-kg patient, respectively. In a pre- and postnatal development study in mice, subcutaneous administration of metreleptin caused prolonged gestation and dystocia resulting in maternal death during parturition and lower survival of offspring in the immediate postnatal period at doses starting approximately at the maximum recommended clinical dose (*see Data*).

MYALEPT contains benzyl alcohol when reconstituted with BWFI. MYALEPT contains no preservative when reconstituted with WFI. Because benzyl alcohol is rapidly metabolized by a pregnant woman, benzyl alcohol exposure in the fetus is unlikely. However, adverse reactions have occurred in premature neonates and low birth weight infants who received intravenously administered benzyl alcohol-containing drugs [see Warnings and Precautions (5.7) and Use in Specific Populations (8.4)]. Therefore, if therapy with MYALEPT is needed during pregnancy, consider using preservative-free WFI when reconstituting [see Dosage and Administration (2.2)].

The estimated background risk of major birth defects and miscarriage for the indicated population is unknown. In the U.S. general population, the estimated background risks of major birth defects and miscarriage in clinically recognized pregnancies is 2-4% and 15-20%, respectively.

Clinical Considerations

Disease-Associated Maternal and Fetal Risk

Lipodystrophy in pregnancy can result in an increased rate of gestational diabetes, macrosomia, eclampsia, intrauterine growth retardation, intrauterine death, and miscarriage.

Labor and Delivery

The effects of MYALEPT on labor and delivery in pregnant women are unknown. In a published *in vitro* study of human myometrial tissue exposed to a recombinant leptin, human uterine contractility was inhibited. In animal studies with metreleptin, prolonged gestation and dystocia were observed (*see Data*).

Data

Animal Data

Metreleptin administered to pregnant mice during the period of organogenesis was not teratogenic at doses ranging between 7- and 15-fold the maximum recommended clinical dose, based on body surface area of a 20- and 60-kg patient, respectively.

In a pre- and postnatal development study in mice, metreleptin administered at doses of 3, 10, and 30 mg/kg (approximately 1-, 5-, and 15-fold the clinical dose for a 60-kg subject, based on body surface area) from gestation day 6 to lactation day 21 caused prolonged gestation and dystocia at all doses, starting at approximately the maximum

recommended clinical dose. Prolonged gestation resulted in the death of some females during parturition and lower survival of offspring within the immediate postnatal period. Consistent with metreleptin pharmacology, decreased maternal body weight was observed from gestation throughout lactation at all doses and resulted in reduced weight of offspring at birth, which persisted into adulthood. However, no developmental abnormalities were observed and reproductive performance of the first or second generations was not affected at any dose.

Placental transfer of metreleptin into the fetus was low (approximately 1%) following subcutaneous dosing.

8.2 Lactation

There are no available data on the presence of metreleptin in human milk; however, endogenous leptin is present in human milk. There are no available data on the effects of metreleptin on the breastfed infant or the effects on milk production. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for MYALEPT and any potential adverse effects on the breastfed child from MYALEPT or from the underlying maternal condition.

8.4 Pediatric Use

The MYALEPT study included a total of 35 pediatric patients (73%) with an age range from 1 to 17 years [see *Clinical Studies* (14.1)]. No clinically meaningful differences were observed in the efficacy and safety of MYALEPT between pediatric and adult patients.

MYALEPT contains benzyl alcohol when reconstituted with BWFI. MYALEPT contains no preservative when reconstituted with WFI. Preservative-free WFI is recommended for use in neonates and infants. The preservative benzyl alcohol has been associated with serious adverse events and death, particularly in pediatric patients. The "gasping syndrome" (characterized by central nervous system depression, metabolic acidosis, gasping respirations, and high levels of benzyl alcohol and its metabolites found in the blood and urine) has been associated with benzyl alcohol dosages >99 mg/kg/day in neonates and low-birth weight infants. Additional symptoms may include gradual neurological deterioration, seizures, intracranial hemorrhage, hematologic abnormalities, skin breakdown, hepatic and renal failure, hypotension, bradycardia, and cardiovascular collapse.

Although normal therapeutic doses of this product deliver amounts of benzyl alcohol that are substantially lower than those reported in association with the "gasping syndrome," the minimum amount of benzyl alcohol at which toxicity may occur is not known. Premature and low-birth-weight infants, as well as patients receiving high dosages, may be more likely to develop toxicity. Practitioners administering this and other medications containing benzyl alcohol should consider the combined daily metabolic load of benzyl alcohol from all sources. When reconstituted with 2.2 mL of BWFI, MYALEPT contains 1.76 mg of benzyl alcohol per mg of metreleptin or 9 mg of benzyl alcohol per mL of reconstituted product.

8.5 Geriatric Use

Clinical trials of MYALEPT did not include sufficient numbers of subjects aged 65 and over (n=1) to determine whether they respond differently from younger subjects. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy.

10 OVERDOSAGE

In one post-marketing case, a dose miscalculation resulted in an infant being exposed to a 10-fold overdose of metreleptin for 8 months. In this case, prolonged overdose was associated with severe anorexia causing vitamin and zinc deficiencies,

iron deficiency anemia, protein calorie malnutrition, and poor weight gain, which resolved following supportive treatment and dose adjustment.

In the event of an overdose, patients should be monitored and appropriate supportive treatment be initiated as dictated by the patient's clinical status.

11 DESCRIPTION

MYALEPT (metreleptin) for injection is a recombinant human leptin analog for injection that binds to and activates the leptin receptor. Metreleptin (recombinant methionyl-human leptin) is produced in *E. coli* and differs from native human leptin by the addition of a methionine residue at its amino terminus. Metreleptin is a 147-amino acid, nonglycosylated, polypeptide with one disulfide bond between Cys-97 and Cys-147 and a molecular weight of approximately 16.15 kDa.

MYALEPT is supplied as a sterile, white, solid, lyophilized cake containing 11.3 mg that is reconstituted with 2.2 mL of BWFI or WFI to a final formulation of 5 mg/mL metreleptin for subcutaneous injection. Inactive ingredients are: glutamic acid (1.47 mg/mL), glycine (20 mg/mL), polysorbate 20 (0.1 mg/mL), and sucrose (10 mg/mL), pH 4.25.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

Adipocytes store lipids to meet the fuel requirements of non-adipose tissues during fasting. In patients with generalized lipodystrophy, the deficiency of adipose tissue leads to hypertriglyceridemia and ectopic deposition of fat in non-adipose tissues such as liver and muscle, contributing to metabolic abnormalities including insulin resistance. Native leptin is a hormone predominantly secreted by adipose tissue that informs the central nervous system of the status of energy stores in the body. In patients with generalized lipodystrophy, leptin deficiency, resulting from the loss of adipose tissue, contributes to excess caloric intake, which exacerbates the metabolic abnormalities.

MYALEPT (metreleptin) for injection exerts its function by binding to and activating the human leptin receptor (ObR), which belongs to the Class I cytokine family of receptors that signals through the JAK/STAT transduction pathway.

12.2 Pharmacodynamics

Clinical studies in patients with generalized lipodystrophy suggest that MYALEPT increases insulin sensitivity and reduces food intake. Improvements in insulin sensitivity and reductions in food intake are consistent with lower HbA_{1c} , fasting glucose, and fasting triglyceride values that were seen in the MYALEPT clinical trial [see *Clinical Studies* (14)].

12.3 Pharmacokinetics

There are limited data on the pharmacokinetics of metreleptin in patients with generalized lipodystrophy, and therefore, no formal exposure-response analysis has been performed. It should be noted that the leptin assay measures both endogenous leptin as well as exogenously administered metreleptin.

Absorption

Peak serum leptin concentration (C_{max}) occurred approximately 4.0 to 4.3 hours after subcutaneous administration of single doses ranging from 0.1 to 0.3 mg/kg in healthy subjects. In a supportive trial in lipodystrophy patients, the median T_{max} of metreleptin was 4 hours (range: 2 to 8 hours; N=5) following single-dose administration of metreleptin.

Distribution

In studies of healthy adult subjects, following intravenous administration of metreleptin, leptin volume of distribution was approximately 4 to 5 times plasma volume; volumes (Vz) (mean \pm SD) were 370 \pm 184 mL/kg, 398 \pm 92 mL/kg, and 463 \pm 116 mL/kg for 0.3, 1.0, and 3.0 mg/kg/day doses, respectively.

Metabolism and Elimination

No formal metabolism studies have been conducted with metreleptin. Nonclinical data indicate renal clearance is the major route of metreleptin elimination, with no apparent contribution of systemic metabolism or degradation. Following single subcutaneous doses of 0.01 to 0.3 mg/mL metreleptin in healthy subjects, the half-life was 3.8 to 4.7 hours. The clearance of metreleptin is expected to be delayed in the presence of leptin antibodies [see *Adverse Reactions* (6.2)].

Drug Interactions

No drug interaction studies have been conducted in lipodystrophy patients [see *Drug Interactions (7)*].

Specific Populations

Renal Impairment

No formal pharmacokinetic studies were conducted in patients with renal impairment. Nonclinical data indicate renal clearance is the major route of metreleptin elimination, with no apparent contribution of systemic metabolism or degradation. Hence, the pharmacokinetics of metreleptin may be altered in subjects with renal impairment.

Hepatic Impairment

No formal pharmacokinetic studies were conducted in patients with hepatic impairment.

Age, Gender, Race, Body Mass Index

Specific clinical studies have not been conducted to assess the effect of age, gender, race, or body mass index on the pharmacokinetics of metreleptin in patients with generalized lipodystrophy.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Two-year carcinogenicity studies in rodents have not been conducted with metreleptin. No proliferative or preneoplastic lesions were observed in mice or dogs following treatment up to six months. However, leptin is reported in the literature to promote cell proliferation *in vitro* and tumor progression in some mouse models of cancer.

Metreleptin was not mutagenic in the Ames bacterial mutagenicity assay or clastogenic in an *in vitro* chromosomal aberration assay in Chinese hamster ovary cells and human peripheral blood lymphocytes. Metreleptin was not mutagenic or clastogenic in an *in vivo* mouse micronucleus assay.

In a fertility study in mice, metreleptin had no adverse effects on mating, fertility, or early embryonic development at doses ranging between 7 and 15 times the maximum recommended clinical dose based on body surface area of a 20- and 60-kg patient, respectively.

14 CLINICAL STUDIES

14.1 Open-Label, Single-Arm Study

An open-label, single-arm study evaluated MYALEPT treatment in patients with congenital or acquired generalized lipodystrophy and diabetes mellitus, hypertriglyceridemia, and/or increased fasting insulin.

Baseline Disease Characteristics and Demographics

Of the 48 patients enrolled, 32 (67%) had congenital generalized lipodystrophy and 16 (33%) had acquired generalized lipodystrophy. Overall, 36 (75%) patients were female, 22 (46%) were Caucasian, 10 (21%) Hispanic, and 9 (19%) Black. The median age at baseline was 15 years (range: 1 - 68 years), with 35 (73%) patients being less than 18 years of age. The median fasting leptin concentration at baseline was 0.7 ng/mL in males (range: 0.3 - 3.3 ng/mL) and 1.0 ng/mL in females (range: 0.3 - 3.3 ng/mL).

Treatment Duration and Dosage in the Study

The median duration of MYALEPT treatment was 2.7 years (range: 3.6 months - 10.9 years). MYALEPT was administered subcutaneously either once daily or twice daily (in two equal doses). The weighted average daily dose (i.e., the average dose taking into account duration of treatment at different doses) for the 36 patients with baseline body weight greater than 40 kg was 2.6 mg for males and 4.6 mg for females during the first year of treatment, and 3.2 mg for males and 6.3 mg for females over the entire study period. For the 12 patients with baseline body weight less than 40 kg, the weighted average daily dose was 0.06 to 0.11 mg/kg (0.8-4.3 mg) over the entire study period.

Efficacy Results

At baseline, 37 (77%) patients had HbA_{1c} values of 7% or greater, 19 (40%) had HbA_{1c} values of 9% or greater, 33 (69%) had fasting plasma glucose values of 126 mg/dL or greater, 17 (35%) had fasting triglyceride values of 500 mg/dL or greater, and 11 (23%) had fasting triglyceride values of 1000 mg/dL or greater.

Patients treated with MYALEPT had mean/median reductions in HbA_{1c} , fasting glucose, and triglycerides at 1 year (Table 4). The changes in HbA_{1c} , fasting glucose, and triglycerides observed at Month 4 were similar to those at 1 year. Concomitant antihyperglycemic and lipid-altering medication dosage regimens were not held constant during the study; for example, some patients treated with insulin had their dosage increased and others had large reductions or discontinuation of insulin.

Table 4: Results in an Open-Label, Single-Arm Study in Patients with Generalized Lipodystrophy Treated with MYALEPT (N=48)

Parameter		Baseline	Change from Baseline at Month
			12
		Mean (SD)	Mean (SD)
HbA _{1c} (%)	3	8.5 (2)	-2 (1.5)
	5		
Fasting Glucose (mg/dL)	3	174 (85)	-49 (75)
	7		
		Median (Q1,	Median Change (Q1, Q3)
		Q3)	
Fasting Triglycerides	3	348 (176, 769)	-184 (-643, -21)
(mg/dL)	6		
			Median Percent Change (Q1, Q3)

Parameter	n	Baseline	Change from Baseline at Month 12
			-55 (-77, -20)%

SD = standard deviation; Q = quartile

Among 28 patients with generalized lipodystrophy who had a baseline HbA_{1c} 7% or greater and data available at Month 12, the mean (SD) baseline HbA_{1c} was 9.3 (1.5%) and the mean reduction in HbA_{1c} at Month 12 was 2.4%.

Among 12 patients with generalized lipodystrophy who had a baseline triglyceride level 500 mg/dL or greater and data available at Month 12, the median baseline triglyceride level was 1527 mg/dL and the median reduction in triglycerides at Month 12 was 1117 mg/dL.

16 HOW SUPPLIED/STORAGE AND HANDLING

16.1 How Supplied

- MYALEPT (metreleptin) for injection for subcutaneous administration is supplied in a single carton containing one vial for reconstitution (NDC 76431-210-01).
- Each vial contains 11.3 mg metreleptin (as a sterile, white, solid, lyophilized cake) to deliver 5 mg per mL of metreleptin when reconstituted with 2.2 mL of BWFI or WFI.

16.2 Storage and Handling

- MYALEPT should be stored in the refrigerator at 36°F to 46°F (2°C to 8°C) and protected from light until preparing for use. Keep MYALEPT vials in the carton when not in use.
- MYALEPT should not be used past the expiration date.
- Do not freeze MYALEPT.
- Do not use if the white lyophilized cake is discolored.
- Use with BWFI: when MYALEPT is reconstituted with BWFI, the vial can be used for multiple doses within 3 days when stored in the refrigerator at 36°F to 46°F (2°C to 8°C) and protected from light.
- Use with WFI: when MYALEPT is reconstituted with WFI, the vial can be used for a single dose should be administered immediately. Unused reconstituted solution cannot be saved for later use and should be discarded.
- After reconstitution, the vials should not be frozen (below 0°C) or shaken vigorously. If the reconstituted product is inadvertently frozen, it should be thrown away.
- After reconstitution, the mixture should be clear and colorless. Do not use if visible particulates are present in the solution.
- Keep out of the reach of children.

17 PATIENT COUNSELING INFORMATION

See FDA-approved Patient Labeling (Medication Guide).

Risk of Neutralizing Antibodies

Advise patients that neutralizing antibodies may result in loss in activity of endogenous leptin or loss of efficacy of MYALEPT. Advise patients on symptoms or signs that would warrant antibody testing [see *Warnings and Precautions* (5.1) and *Adverse Reactions* (6.2)].

Risk of Lymphoma

Advise patients that lymphoma has been reported in patients both treated and not treated with MYALEPT. Advise patients on symptoms or signs that indicate changes in hematologic status and the importance of routine laboratory assessments and physician monitoring [see *Warnings and Precautions* (5.2)].

Risk of Hypoglycemia

Advise patients that the risk of hypoglycemia is increased when MYALEPT is used in combination with insulin or an insulin secretagogue (e.g., sulfonylurea). Explain the symptoms, treatment, and conditions that predispose to development of hypoglycemia to the patient. Advise patients who are taking concomitant insulin, especially those on high doses, or an insulin secretagogue, to closely monitor blood glucose. Hypoglycemia management should be reviewed and reinforced when initiating MYALEPT therapy, particularly when concomitantly administered with insulin or an insulin secretagogue [see *Warnings and Precautions* (5.4)].

Risk of Autoimmune Disease

Advise patients that worsening of autoimmune disease has been reported during the clinical study of MYALEPT. Advise patients with a history of autoimmune disease on symptoms or signs that indicate exacerbation of underlying autoimmune disease and the importance of routine laboratory assessments and physician monitoring [see *Warnings and Precautions* (5.5)].

Risk of Hypersensitivity Reactions

Inform patients that hypersensitivity reactions have been reported during use of MYALEPT. If symptoms of hypersensitivity reactions occur, patients should seek medical advice [see *Warnings and Precautions* (5.6)].

Instructions

- Inform patients that each vial of MYALEPT requires reconstitution with BWFI or preservative-free WFI, and administration as subcutaneous injection using a syringe and needle. Injections can be given at any time of the day, with or without meals.
- Patients and caregivers should receive proper training in how to prepare and administer the correct dose of MYALEPT prior to self-administration. The first dose of MYALEPT should be administered by the patient or caregiver under the supervision of a qualified healthcare professional.
- Advise patients on appropriate syringe for administration, dosing regimen, injection technique, and the importance of
 proper storage of MYALEPT. Care should be taken to avoid intramuscular injection, especially in patients with
 minimal subcutaneous adipose tissue.
- Advise patients to read the Instructions for Use for complete administration instructions. The MYALEPT Medication Guide and Instructions for Use should be reviewed before starting therapy and each time the prescription is refilled.
- When discontinuing MYALEPT in patients with a history of pancreatitis and/or severe hypertriglyceridemia, instruct patients to taper their dose over a one-week period. Advise patients that additional monitoring of triglyceride levels and possible initiation or dose adjustment of lipid-lowering medications may be considered [see *Dosage and Administration* (2.5)].

Manufactured by:



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